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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/787,793	06/12/2001	Atsuchi Yatagai	1752-0143P	9670

2292 7590 08/25/2003

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EXAMINER

NAFF, DAVID M

ART UNIT	PAPER NUMBER
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1651

DATE MAILED: 08/25/2003

13

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/787793

Applicant(s)

Xtaya: shp

Examiner

Natt

Group Art Unit

1657

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

## Status

- 6/11/03
- ☒ Responsive to communication(s) filed on \_\_\_\_\_.
  - ☒ This action is **FINAL**.
  - ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 1 1; 453 O.G. 213.

## Disposition of Claims

- ☒ Claim(s) 1-9 + 15-20 is/are pending in the application.
- ☐ Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- ☒ Claim(s) 1-9 + 15-20 is/are rejected.
- ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- ☐ Claim(s) \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
  - ☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been received.
  - ☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.
  - ☐ received in this national stage application from the International Bureau (PCT Rule 1.7.2(a)).

\*Certified copies not received: \_\_\_\_\_

## Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_
- ☐ Interview Summary, PTO-413
- ☐ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Other \_\_\_\_\_

Office Action Summary

Art. Unit: 1651

The amendment of 6/11/03 amended claims 1-3, added claims 19 and 20, and canceled claims 10-14.

Claims examined on the merits are 1-9 and 15-20, which are all claims in the application.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 20 is rejected under 35 U.S.C. 112; first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification fails to support kieselguhr as being a substance having cation exchange capacity as required by the claim. At page 10, line 6, kieselguhr is disclosed as a microporous substance. In line 5 from the bottom of page 10, zeolites, synthetic zeolites and bentonite are disclosed as cation exchangers. Kieselguhr is not mentioned as a cation exchanger.

Art. Unit: 1651

**Claim Rejections - 35 USC § 112**

The following is a quotation of the second paragraph of 35 U.S.C.

112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 4, 6-9 and 15-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 and claims dependent thereon are confusing and unclear by claim 1 requiring particles of calcium carbonate dispersed in sulfur, and not requiring the calcium carbonate added to melted sulfur to be particles. In line 4 of claim 1, it is suggested that --- particles --- be inserted after "carbonate".

Claims 16-18 are further confusing and unclear and are improper dependent claims by depending on both claims 15 and 1. Additionally, the claims are confusing by reciting in line 1 "The method of claim 15 for treating an effluent" since claim 15 is treating water instead of an effluent. It is suggested claims 16-18 be amended in line 1 by changing "The" to --- A ---, and canceling "claim 15 for treating" and inserting --- decreasing nitrate nitrogen concentration of an ---.

**Claim Rejections - 35 USC § 103**

Claims 2-5, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kruithof et al or van der Hoek et al or Le Cloirec et

Art Unit: 1651

al (all listed on form PTO-1449 of 6/12/01) for reasons in the previous office action of 3/11/03 and for reasons herein.

The claims are drawn to a denitrifying composition containing particles of calcium carbonate and particles of a substance possessing cation exchange capacity or particles of a microporous substance dispersed in sulfur.

Kruithof et al and van der Hoek et al disclose removing nitrate from water using sulphur/limestone filtration.

Le Cloirec et al disclose using a mixture of sulphur and calcium carbonate for denitrification.

In each of Kruithof et al, van der Hoek et al and Le Cloirec et al an admixture of calcium carbonate (limestone) and sulphur is used. To form this admixture by mixing calcium carbonate particles with sulphur to disperse the particles in sulphur would have been have been an obvious way of forming the admixture. Mixing a cation exchange material or a microporous material with the calcium carbonate and sulphur would have been obvious to obtain the binding and/or filtration properties of these materials to remove contaminants in water since such material are known for use in treatment of water.

#### ***Response to Arguments***

Applicant's arguments filed 6/11/03 have been fully considered but they are not persuasive.

Applicants urge that the prior art does not teach nor suggest the use of a substance possessing cation exchange capacity or a microporous substance in compositions as required by claims 2 and 3. However,

Art. Unit: 1651

cation exchangers and microporous substances are well known for treating water to remove substances, and their use would have been obvious from knowledge common in the art.

Applicants refer to Example 2 as showing that the compositions of claims 2 and 3 have unexpectedly better properties. However, the compositions used in Example 2 are prepared as in Example 1 where particles of calcium carbonate are dispersed in melted sulfur, and the resultant dispersion is solidified by cooling. Additionally, Example 2 uses a specific cation exchanger and microporous substance in a specific amount. The compositions of claims 2 and 3 merely require an admixture and any amount of cation exchanger and microporous substance, and are not commensurate in scope with the compositions used in Example 2. The compositions of claims 2 and 3 would not have to provide results obtained in Example 2.

Claims 1, 6-9 and 15-18 are free of the prior art.

Claim 4 would be free of the prior art if made dependent on claim 1.

Claims 2 and 20 would be free of the prior art if claim 2 is amended to read --- The denitrifying composition as described in claim 1 wherein a substance possessing cation exchange capacity is additionally dispersed in the sulfur. ---.

Claims 3, 5 and 19 would be free of the prior art if claim 3 is amended in the same type of way as claim 2.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE**

Art. Unit: 1651

**FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David M. Naff whose telephone number is (703) 308-0520. The examiner can normally be reached on Monday-Friday from about 9:30 AM to about 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, a message can be left on voice mail.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Wityshyn, can be reached at telephone number (703) 308-4743.

The fax phone number is (703) 872-9306.

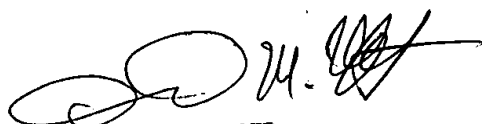
Application/Control Number: 09/787,793

Page 7

Art Unit: 1651

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0196.

DMN  
8/22/03

  
DAVID M. NAFF  
PRIMARY EXAMINER  
ART UNIT 1651